

DOT 2234260

CLAIMS

WHAT IS CLAIMED IS:

- 1 ~~SUB 1~~ 1. A method of making a photonic via comprising:
2 making a hole in a substrate;
3 depositing a cladding material into the hole;
4 depositing an optical core material into the hole.
- 1 2. The method of claim 1 further comprising:
2 forming a lens on top of the optical core material.
- 1 3. The method of claim 2 further comprising:
2 depositing a polymer on top of the optical core material; and
3 curing the polymer to form a lens.
- 1 4. The method of claim 1 further comprising:
2 polishing the substrate.
- 1 5. The method of claim 1, wherein the hole is made only partially through the
2 substrate.

1 6. The method of claim 5, wherein the hole is made to couple to a photonic
2 component in the substrate.

1 7. A method of making a photonic via comprising:
2 etching a trench in a substrate;
3 depositing a cladding material into the trench;
4 depositing an optical core material into the trench.

1 8. The method of claim 7 further comprising:
2 forming a lens on top of the optical core material.

1 9. The method of claim 8 further comprising:
2 depositing a polymer on top of the optical core material; and
3 curing the polymer to form the lens.

1 10. The method of claim 9 further comprising:
2 polishing the substrate.

1 11. The method of claim 10, wherein the depositing the cladding material into the
2 trench is achieved by depositing an oxide into the trench.

1 12. A method of making a photonic via comprising:
2 etching a trench in a silicon substrate;
3 depositing an oxide into the trench;

4 depositing a first polymer into the trench, wherein the polymer has an index
5 of refraction higher than that of the oxide.

1 13. The method of claim 12 further comprising:
2 polishing the silicon substrate.

1 14. The method of claim 13 further comprising:
2 forming a lens over the first polymer.

1 15. The method of claim 14 further comprising:
2 depositing a second polymer over the first polymer; and
3 curing the second polymer to form the lens.

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